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L12: Entry 1 of 3 File: USPT

DOCUMENT-IDENTIFIER: US 6284465 B1
TITLE: Apparatus, systems and method for locating nucleic acids bound to surfaces

Detailed Description Text (82):
The feasibility of locating features 13, 17 by a fluorescence signal 14 emitted from surface bound probes 12, which is different from the fluorescence signal 18 from a fluorophore labeled target sequence was demonstrated. Two different probe sequences 12 were synthesized in situ, using conventional techniques, but not directly labeled for the reason mentioned above for Example I experiment. Instead, two different target nucleotide sequences were biotinylated to indirectly label the probes 12 during hybridization. Streptavidin-labeled rhodamine-containing polystyrene microspheres were bound to the biotin, thereby providing the fluorescence label to the probes 12. The rhodamine absorbs green light and fluoresces in an orange-red color. The rhodamine microspheres were used in this experiment instead of the fluorescent dye pair microspheres mentioned above for Example 5. In either case, the feasibility of using fluorescence-containing microsphere labels was demonstrated. Also, two different target nucleotide sequences were labeled with a fluorophore Cy5 that absorbs red light and fluoresce in far red spectral region. The fluorescences from the Cy5 fluorophore label and the rhodamine are spectrally distinct for the purposes of the invention, in order to demonstrate measurement of both fluorescence channels (signals 14 and 18) from the same array.

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Search Results -

Terms	Documents
nucleic same suvstrate$	0

Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: nucleic same substrate$

Refine Search | Recall Text | Clear

Search History

DATE: Thursday, August 01, 2002 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT; PLUR=YES; OP=OR			
L7	nucleic same suvstrate$	0	L7
L6	L5 same surface$	3	L6
L5	l1 same microsphere$	7	L5
L4	L3 same (advantag$ or useful$)	2	L4
L3	L2 same hybridiz$	30	L3
L2	L1 near0 nucleic	84	L2
L1	different near0 target$	5375	L1

END OF SEARCH HISTORY

FILE 'HOME' ENTERED AT 12:07:40 ON 04 APR 2002)

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE' ENTERED AT 12:07:58 ON 04 APR 2002

L1 0 S ARRAY SAME MICROSPHERE?
L2 196 S ARRAY (P) MICROSPHERE?
L3 9 S L2 (P)NUCLEIC (P)HYBRIDIZ?
L4 9 DUPLICATE REMOVE L3 (0 DUPLICATES REMOVED)

(FILE 'HOME' ENTERED AT 14:33:53 ON 01 AUG 2002)

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE' ENTERED AT 14:34:09 ON 01 AUG 2002

L1	309	S	FIBER(W)OPTIC(W)BUNDLE?
L2	7	S	L1 (P)(NUCLEIC OR DNA OR POLYNUCLEOTIDE)
L3	0	S	L2 (P)(ADVANTAG? OR USEFUL?)
L4	32	S	L1 (P)(ADVANTAG? OR USEFUL?)
L5	1253325	S	GLASS OR PLASTIC?
L6	9021	S	L5 (P)(NUCLEIC OR DNA)
L7	1379	S	L6 (P)HYBRIDIZ?
L8	115	S	L7 (P)SUBSTRATE?
L9	16	S	L8 (P)(ADVANTAG? OR USEFUL?)
L10	12		DUPLICATE REMOVE L9 (4 DUPLICATES REMOVED)
L11	0	S	DECODER (W)LIGAND?
L12	5	S	DECODER (P)LIGAND?
L13	2	S	L12(P)(NUCLEIC OR DNA)

English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9967641	A2	19991229	WO 1999-US14387	19990624
	WO 9967641	A3	20000309		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LK, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9948315	A1	20000110	AU 1999-48315	19990624
	EP 1090293	A2	20010411	EP 1999-931904	19990624
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002519637	T2	20020702	JP 2000-556247	19990624
PRAI	US 1998-90473P	P	19980624		
	US 1998-189543	A	19981110		
	WO 1999-US14387	W	19990624		

AB The invention relates to compns. and methods for decoding microsphere array sensors. It provides array compns. comprising a substate with a surface comprising discrete sites. The compn. further comprises a population of microspheres comprising at least a first and a second subpopulation; each subpopulation comprises a bioactive agent; and an identifier binding **ligand** that will bind a **decoder** binding **ligand** such that the identity of the bioactive agent can be elucidated. The microspheres are distributed on the surface. The microspheres comprise at least a first and a second subpopulation each comprising a bioactive agent and do not comprise an optical signature. The microspheres comprise at least a first and a second subpopulation each comprising a bioactive agent and an identifier binding **ligand** that will bind a **decoder** binding **ligand** such that the identification of the bioactive agent can be elucidated. The invention provides methods of decoding an array compn. comprising providing an array compn., and adding a plurality of decoding binding **ligands** to the array compn. to identify the location of at least a plurality of the bioactive agents. Bioactive agents are proteins or **nucleic** acids.

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